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ORIGINAL ARTICLE

Prevalence of burn out in clinical residents and its contributing factors – A cross sectional survey.

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ABSTRACT… Objective: To identify the prevalence, contributing factors and coping mechanisms for burnout in clinical residents of a tertiary care centre. **Study Design:** Cross Sectional Survey. **Setting:** Islamic International Medical College, Railway Hospital, Rawalpindi. **Period:** April 2019 to August 2020. **Material & Methods:** A survey questionnaire consisting of the abbreviated Maslach burnout inventory along with questions on contributing factors and coping mechanisms for burnout was distributed among clinical residents at Pakistan Railway Hospital, Rawalpindi. Data was collected and analyzed using SPSS. Burnout score was calculated for each resident along with the subscale analysis. Chi square was used to identify significant contributing factors to the burnout ($P \leq 0.05$). Percentages were calculated for the coping mechanisms used by the residents. **Results:** Seventy seven residents participated in the survey. Mean Maslach score was 31.79, SD=7.22 for the whole group. 47(61%) residents were categorized as having significant burnout. No risk factor was found to be associated significantly with burnout (p-value ≤ 0.05). Work hours (Mean=2.43, SD=1.56), working conditions (Mean=2.82, SD=1.62) and senior consultant bullying (Mean=2.98, SD=1.96) were considered to be the most important factors contributing to the burnout. The main coping mechanisms identified were staying optimistic (58%), sleeping more (49.4%) and spending time with family (49.4%). Only 5.2% residents had any departmental support. **Conclusion:** Burn out is commonly present in clinical residents. No significant association with specific factors contributing to burnout was found however residents rate work hours, working conditions and senior consultant bullying as contributing the most.

Key words: Burnout, Career, Occupational Burnout, Professional Burnout, Resident Burnout.

INTRODUCTION

Burnout is an occupational syndrome described by the World Health Organization as the ineffective management of chronic workplace stressors characterized by exhaustion, feelings of detachment and cynicism towards the job and decreased professional competence.[1] Residency programmes are infamously demanding and stressful and constant exposure to such situations leads to fatigue which eventually results in burnout. The expectation of acquiring new knowledge and skills whilst simultaneously maintaining satisfactory patient care can be challenging for residents. This is probably the reason for burnout being higher among surgeons than physicians.[2,3]

The consequences of burnout are detrimental not only for patients but also for healthcare workers and institutions. It can lead to decreased job satisfaction and poorer quality of patient care and thus serves as an indirect indicator of the quality of a healthcare organization.[3,4] It has also been associated with depression, drug addiction and suicide among residents.[2,5] One estimate reported an annual cost of $4.6 billion to the US healthcare system because of reduced hours, physician turnover, and expenses associated with recruiting replacements due to burnout.[6]

Various aspects of physician burnout have been researched in the West over the past decade but limited work has been done in our country with the focus mainly being placed on the documentation

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of its prevalence among doctors.[7,8] Little work has been done on objectively measuring the impact of the contributing factors or coping mechanisms used by residents in our particular environment.[9,10] The residency training format, environment and culture in our country varies significantly from the West and it is therefore likely that different factors perpetuate burnout in our setting. Moreover, cultural differences are likely to influence the coping mechanisms adopted by residents particularly as most institutions in our country fail to fully recognize burnout as an occupational hazard. We therefore aim to contribute to the existing work done on resident burnout by highlighting the contributing factors and coping mechanisms used in our particular scenario.

MATERIAL & METHODS

A cross sectional survey design was chosen to assess burnout among residents, its contributing factors and coping mechanisms used by residents to mitigate it. The questionnaire had two parts. Part A consisted twelve questions taken from Maslach abbreviated inventory created for health care workers.[2] The inventory scores burnout on four subscales from 0 to 6, which when combined can determine the level of burnout in the participant. The subscales are emotional exhaustion, depersonalization, personal accomplishments and satisfaction with medicine. Higher scores in the first three criteria means higher degree of burnout in the participant. While higher score in the fourth criteria indicates more satisfaction with medicine and thus lower burnout.[2]

Part B of the questionnaire collected data on different contributing factors to the burnout identified through literature search on burnout across different specialties.[4,10,11] These were: gender, marital status, no. of children, residents' area and level (year) of training, average working hours per week (<40, 40-70, >70 hrs), average number of patients seen per day (<10, 10-50, >50), salary per month (Rs <40,000, 40,000-70,000, >70,000), working conditions, time pressures, senior consultant bullying, and error in patient care/ major surgical complication. In addition, residents were asked to rate these factors on a scale of 1 to 8 for contributing towards burnout where 1 was the most important while 8 was the least important contributing factor. Residents were also asked to identify relevant coping mechanisms they used to mitigate burnout.

Sample size of 71 residents was calculated using sample size calculator available on ClinCalc.com with 80% power and alpha at 0.05, using an incidence of 75% for burnout in residents from a previous study.[4]

The questionnaires were distributed manually among clinical residents of Railway Hospital IIMCT after approval from the institute's ethical review committee (Ref No. Riphah/IIMC/IRC/19/0342) dated April 2019. Data from the survey was collected and analyzed using SPSS Statistical Software ver. 21.

Frequencies were calculated for the demographic data. Maslach burnout score was calculated for each resident. Residents scoring above 28 (corresponding to burnout feelings for a few times a month or more) were considered having significant burnout. Chi square was used to assess any significant association with the contributing factors and p-value less than 0.05 was considered significant. Frequencies were also calculated for the coping mechanisms used by residents and any significant association tested with Chi square (p value < 0.05)

RESULTS

A total of 77 surveys were filled by the residents of different clinical specialties. Twenty three (29.9%) trainees from general surgery, 16 (20.8%) from Obstetrics & Gynaecology, 12 (15.6%) from medicine, 7 (9.1%) from radiology, 5 (6.5%) each from orthodontics and ENT, 3 (3.9%) from paediatrics medicine, 2 (2.6%) from Eye and 1(1.3%) from anaesthesia department participated in the study. 3 trainees did not disclose their departments.

There were 43 (55.8%) male and 32 (41.6%) female residents. 2 respondents did not disclose their gender. 37 (48.1%) were married and 40 (51.9%) were unmarried. 58 out of 77 (75.3%) were FCPS

trainees. 40 (51.9%) amongst these were first year trainees. 59 (76.6%) had no additional source of income other than their training stipend.

Mean Maslach score was 31.79 (±7.22) for the whole group with higher mean scores in Emotional Exhaustion (11.49 ± 3.83), depersonalization (Mean=13.87 SD= 3.90), and lower score in personal accomplishment (Mean= 6.43, SD= 3.16) subscales contributing towards burnout. Based on our pre decided cutoff value of 28, 47(61%) residents were categorized as having significant burnout.

The results of the Chi square test used to identify association of any risk factor with significant burnout are shown in Table-I. No risk factor was found to be associated significantly with burnout (p-value ≤ 0.05).

Contributing Factors	Chi Square Test (P-Value)
Gender	0.182
Marital status	0.785
Discipline	0.924
Salary	0.125
Additional resources	0.571
Children	0.661
Training year	0.817
Working Hours	0.169
Number of patients seen per day	0.365

Table-I. Association of known contributing factors to physician burnout

The means calculated for contributing factors rated on a scale of 1 to 8 are shown in Table-II. Where 1 was the most important contributing factor as perceived by the resident and 8 the least important.

Risk Factors	Mean	Standard Deviation
Working conditions	2.82	1.62
Time pressures	4.19	1.82
Senior consultant bullying	2.98	1.96
Work hours	2.43	1.56
Decreased personal life	3.45	1.63
Financial situation	4.29	1.76
Error in patient care	5.37	2
Major surgical complication	6.36	2.02

Table-II. Mean rating of contributing factors towards burnout

Percentages calculated for different coping methods used by residents to cope with burnout are shown in Table-III. No coping method had any significant association with burnout ($p < 0.05$).

Coping Methods	No.	Percentages	Chi Square P-Value
Staying Optimistic	44	58%	0.487
Exercising	29	37%	0.268
Avoiding others	28	36.4%	0.158
Sleeping more	38	49.4%	0.927
Watching movies	22	28.6%	0.209
Spending time with family	38	49.4%	0.399
Smoking Cigarettes	11	14.3%	0.252
Drugs or Medications	0	0%	-
Departmental support	4	5.2%	0.557
Seeking Reassurance	16	20.8%	0.198

Table-III. Frequency of coping mechanisms used by residents and association with burnout

DISCUSSION

Burnout as an occupational syndrome is quite common in medical profession throughout the world. However, its recognition and management are variable in different regions. Pakistan is amongst the countries where recognition of this entity in its doctors is slowly increasing and some early research on prevalence in some clinical specialties and factors related to the burnout already exists. Various studies have been done on the prevalence of burnout in different categories of healthcare workers in Pakistan. Among physicians some studies look at the clinical workforce (residents and consultants together)[8] while a few have been done on residents exclusively.[7,9] Amongst these most pertain to single departments while our study looked at the residents collectively from all clinical departments thus making possible a comparison between them to some extent.

Generally, it has been reported that 27-75% residents experience burnout regardless of the specialty worldwide[4] and our study also showed a high prevalence of 61% among clinical residents. Overall prevalence was a little lower in a meta-analysis conducted on burnout due to different burnout rates in different specialties supporting

the notion that it is dependent upon the working environment in a particular specialty.[3] However our study does not support this argument and there was no significant association of any individual specialty with significant burnout score. Research indicates that burnout is usually more common in general surgery and related specialties as compared to physicians.[2,3,8] Since in our study overwhelming majority (67.6%) were from surgery and allied specialties any comparison with medical and allied specialties could be statistically flawed.

When looking at the contributing factors of the burnout the literature seems divided. Many different factors have been proposed to be contributing towards the syndrome like gender[12], year of training[10], unsatisfactory training,[8] work load, [8, 13] low salary, [8] long working hours[7,8,11], bullying[14], intimidation and harassment[15], Patient complications[5], lack of mindfulness[2], lack of mentoring or institutional support[16,17], and trainees' personality traits.[18] However, there is little objective evidence that any of these factors is solely responsible for burnout. Some studies have shown that even sleep hours and call responsibilities have no association with burnout when objectively measured.[19] Working or duty hours which have been long considered a very important factor causing burnout and subjectively reported to be so, have also failed to demonstrate a significant relationship with burnout.[10,20] Studies by Oakley[21] and Ripp[22] also failed to show any improvement in burnout levels after enforcement of duty hours regulations. This is supported by our study as well in which no single factor including gender, marital status, children, salary, work hours, patient load, or training year were significantly associated with burnout when measured objectively. In another study 25% residents were working without a salary but there was no association found with burnout.[9]

However, when subjectively asked residents did rate the work hours along with working conditions as the most important factors contributing towards burnout in our study. Senior consultant bullying was rated after this as the most important factor which has not been reported previously in any of our local studies. But resident perspectives from west do indicate that respect is necessary for a resident's sense of belonging ultimately affecting their sense of well being and burnout.[14,23] It is also surprising that our residents did not find patient error or surgical complications as contributing towards burnout unlike studies from the west.[5,15]

Few interventions have been studied to mitigate burnout. Since none of our local studies provide an insight into what particular methods our residents use in our specific cultural context and support systems, we focused mainly on identifying what measures were reported by the residents themselves that they used to counter burnout and whether any of these were used more significantly by those who were in the category of significant burnt out as compared to the others. Our data suggested that our residents used internal self-regulatory mechanisms almost entirely to mitigate burnout predictably because of lack of recognition of this entity at institutional level. Most of the residents tried to stay optimistic and spent time with family or slept more to mitigate their feelings of burnout. Only a few (5.2%) had any departmental support or reached out for help.

In literature amongst the most studied mitigating factors is the working hours reduction.[17] One systematic review shows a consistent decrease in EE component of burnout in different studies[17] as opposed to the studies by Oakley[21] and Ripp.[22] It has been suggested that reducing work hours increases trainees' sense of control over their work, and in addition increasing recognition of their work contribution, ensuring a clear division of roles, and creating a sense of justice reduces burnout.[17] However none of our trainees suggested that workhour reduction could alleviate their feelings of burnout.

Few other interventions have been studied and amongst those only meditation and self-care workshops have shown any effect.[17] Since learning of trainees is directly affected by the environment they are working in, a sense of community in which errors are accepted and they are encouraged to make their decision and are rewarded will help in

mitigating burnout.[24] Reading and spending time with family also helped reduce burnout according to another study.[13] Residents highly valued their colleagues (67%), program directors (60%) and external psychiatrist/psychologist (49%) as well-being resources in another study. Over one third of residents in this study wished to have a career counselor (39%) and financial counselor (38%).[15] As compared to these 20.8% residents in our study expressed that they used colleague or senior reassurance to mitigate the feelings of burnout. Certain personal traits of trainees like their personality traits[18] and Emotional intelligence[25] have also been linked with ability to mitigate burnout in residents and further studies are needed to discern how much these affect the overall perception of burnout in residents. Only 5.2% of our trainees had any departmental support to mitigate burnout in our study. However, research indicates that organizational strategies to jointly monitor and improve physician wellness are needed.[17]

Limitations of the study: The study depicts data from a single institute.

CONCLUSION

Burnout is quite common in our residents across clinical specialties. Unlike other studies no single factor had any significant association with burnout. Our trainees mainly used self-regulatory mechanisms to mitigate burnout in the absence of institutional support.

REFERENCES

1. World Health Organization. **Burn-out an "occupational phenomenon": International classification of diseases.** 2019. Available from: https://www.who.int/mental_health/evidence/burn-out/en/.

2. Lebares CC, Guvva EV, Ascher NL, O'Sullivan PS, Harris HW, Epel ES. **Burnout and stress among US surgery residents: Psychological distress and resilience.** Journal of the American College of Surgeons. 2018 Jan 1; 226(1):80-90.

3. Rodrigues H, Cobucci R, Oliveira A, Cabral JV, Medeiros L, Gurgel K, et al. **Burnout syndrome among medical residents: A systematic review and meta-analysis.** PloS one. 2018 Nov 12; 13(11): e0206840.

4. Ishak WW, Lederer S, Mandili C, Nikravesh R, Seligman L, Vasa M, et al. **Burnout during residency training: A literature review.** J Grad Med Educ. 2009; 1(2):236–42.

5. Srinivasa S, Gurney J, Koea J. **Potential consequences of patient complications for surgeon well-being: A systematic review.** JAMA surgery. 2019 May 1; 154(5):451-7.

6. Powell A. (Internet). **Study: Doctor burnout costs healthcare system $4.6 billion a year.** The Harvard Gazette. July 12, 2019. Available from: https://news.harvard.edu/gazette/story/2019/07/doctor-burnout-costs-health-care-system-4-6-billion-a-year-harvard-study-says/.

7. Waheed K, Liaqat N, Ejaz S, Khanum A, Ijaz S, Butt A, et al. **Burnout among gynaecological residents in Lahore, Pakistan: A cross-sectional survey.** J Pak Med Assoc. 2017 Sept; 67(9):1318-1322.

8. Siddiqui AA, Jamil M, Kaimkhani GM, Wasim M, Katto MS, Yaqoob U, et al. **Burnout among orthopedic surgeons and residents in Pakistan.** Cureus. 2018 Aug; 10(8).

9. Malik AA, Bhatti S, Shafiq A, Khan RS, Butt UI, Bilal SM, et al. **Burnout among surgical residents in a lower-middle income country–Are we any different? Annals of medicine and surgery.** 2016 Aug 1; 9:28-32.

10. Zubairi AJ, Noordin S. **Factors associated with burnout among residents in a developing country.** Annals of medicine and surgery. 2016 Mar 1; 6:60-3.

11. Aminazadeh N, Farrokhyar F, Naeeni A, Naeeni M, Reid S, Kashfi A, et al. **Is Canadian surgical residency training stressful?.** Canadian journal of surgery. 2012 Aug; 55(4 Suppl 2):S145.

12. Wang LJ, Tanious A, Go C, Coleman DM, McKinley SK, Eagleton MJ, et al. **Gender-based discrimination is prevalent in the integrated vascular trainee experience and serves as a predictor of burnout.** Journal of vascular surgery. 2020 Jan 1; 71(1):220-7.

13. Marchalik D, Brems J, Rodriguez A, Lynch JH, Padmore J, Stamatakis L, et al. **The impact of institutional factors on physician burnout: A national study of urology trainees.** Urology. 2019 Sep 1; 131:27-35.

14. Ayyala MS, Rios R, Wright SM. **Perceived bullying among internal medicine residents.** Jama. 2019 Aug 13; 322(6):576-8.

15. Cohen JS, Patten S. **Well-being in residency training: a survey examining resident physician satisfaction both within and outside of residency training and mental health in Alberta.** BMC medical education. 2005 Dec; 5(1):21.

16. Bingmer K, Wojnarski CM, Brady JT, Stein SL, Ho VP, Steinhagen E. **A model for a formal mentorship program in surgical residency.** journal of surgical research. 2019 Nov 1; 243:64-70.

17. Busireddy KR, Miller JA, Ellison K, Ren V, Qayyum R, Panda M. **Efficacy of interventions to reduce resident physician burnout: A systematic review.** Journal of graduate medical education. 2017 Jun; 9(3):294-301.

18. Prins DJ, van Vendeloo SN, Brand PL, Van der Velpen I, de Jong K, van den Heijkant F, et al. **The relationship between burnout, personality traits, and medical specialty. A national study among Dutch residents.** Medical teacher. 2019 May 4; 41(5):584-90.

19. Marek AP, Nygaard RM, Liang ET, Roetker NS, DeLaquil M, Gregorich S, et al. **The association between objectively-measured activity, sleep, call responsibilities, and burnout in a resident cohort.** BMC medical education. 2019 Dec; 19(1):1-7.

20. Nishimura Y, Miyoshi T, Obika M, Ogawa H, Kataoka H, Otsuka F. **Factors related to burnout in resident physicians in Japan.** International journal of medical education. 2019; 10:129.

21. Oakley SH, Estanol MV, Westermann LB, Crisp CC, Kleeman SD, Pauls RN. **Resident burnout after the 2011 accreditation council for graduate medical education duty-hour restrictions: A cross-sectional survey study.** Obstetrics & Gynecology. 2014 May 1; 123:117S-8S.

22. Ripp JA, Bellini L, Fallar R, Bazari H, Katz JT, Korenstein D. **The impact of duty hours restrictions on job burnout in internal medicine residents: A three-institution comparison study.** Academic medicine. 2015 Apr 1; 90(4):494-9.

23. Berg DD, Divakaran S, Stern RM, Warner LN. **Fostering meaning in residency to curb the epidemic of resident burnout: Recommendations from four chief medical residents.** Academic Medicine. 2019 Nov 1; 94(11):1675-8.

24. Zuniga LM, Dewey CM, Turner TL. **Reshaping the residency environment to enhance education and mitigate burnout.** Medical teacher. 2019 Nov 2; 41(11):1323-6.

25. Lin DT, Liebert CA, Tran J, Lau JN, Salles A. **Emotional intelligence as a predictor of resident well-being.** Journal of the American College of Surgeons. 2016 Aug 1; 223(2):352-8.

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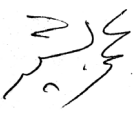
1	Umar Bashir	Conception of research idea, designing research, collecting data, analysis and writing the manuscript.	
2	Afsheen Zafar	Designing research and survey tool, analysis of data and manuscript.